National Aeronautics and Space Administration

Educational Product	
Educators & Students	Grades 5-12

ET-2002-09-122-ARC

Educational Topic

Human Factors Researcher

Related Job Titles:

Research Psychologist, Research Associate, Human Performance Researcher, Human Physiology Researcher

Job Description:

This type of work within aviation ranges from studying pilots in the cockpit as they relate to the cockpit controls all the way to studying sleep physiology in order to improve safety for pilots during flight operations of long duration. The researcher would use the scientific method to develop a hypothesis and set up an experiment that would test the theory. After lengthy and repeated trials, the results would be presented and enacted in a trial of the new methodology being suggested by the study. The researcher would have to be able to develop and perform scientifically-based experiments and document the results. Such studies might occur over a long period of time, other studies might cover a few weeks or days with others lasting no more than an hour. The researcher must be a keen observer with excellent note taking skills as well as fine writing skills with which to develop detailed reports.

Interests / Abilities:

- Do you like to take things apart and see how they work?
- Are you fascinated with the human body and how it works? Would you be interested to see how it operates especially in extreme or unusual situations?
- Would finding a better way to make a machine or assembly line work more efficiently be a fun challenge?
- Do you enjoy studying people and how they interact with machines?

Suggested School Subjects / Courses:

- Mathematics: Algebra and Statistics
- Psychology
- Sociology (the study of human relationships)
- Physiology (the study of body systems and their interactions)
- Kinesiology the study of human movement and mechanics)
- Biology

Education / Training Needed:

To perform the lab work would require a Bachelor's degree from an accredited college or university in the field(s) of biology, psychology or psysiology. To oversee some research projects would require a Master's degree in a complimentary subject. To manage a research program would require a Ph. D. Depending upon what specialty you go into, a license might be required which would mean you have to take a licensing exam.

Areas of expertise:

- Behavioral Sciences: Psychology, Clinical Psychology, Physiological Psychology
- Biology: Biophysics, Physiology, Kinesiology
- Human/system integration technology

Additional Resources:

- Fatigue Countermeasures Group
  http://human-factors.arc.nasa.gov/zteam
- National Transportation Safety Board
  http://www.ntsb.gov/
- Flight Safety Foundation
  http://www.flightsafety.org/
- Aircraft Owners and Pilots Association
  http://www.aopa.org/
- Student Educational Employment Programs
  http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- NASA Jobs
  http://nasajobs.nasa.gov/
- NASA Summer High School Apprenticeship Research Program (SHARP)
  http://www.mtsibase.com/sharp/

What can I do right now?

- Visit a medicine and technology museum to see the advances made in medical research so far.
- Interview a psychologist and ask about psychology research.
- Participate in a chat or Web cast at NASA Quest that discusses human factors research. http://quest.nasa.gov
- Do a report in your psychology or sociology class on human factors research in aerospace labs.
- Work with your biology, psychology or kinesiology teacher to devise a research project that follows all proper safety guidelines.
- Volunteer to collect data for a research project.

Please take a moment to evaluate this product at:
http://ehb2.gsfc.nasa.gov/edcats/educational_topic

Your evaluation and suggestions are vital to continually improving NASA educational materials.
Thank you.